# Freeform Search

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IBM Technical Disclosure Bulletins

**Term:** L21 and (pharmaceutical or medical)

**Display:** 20 **Documents in Display Format:** CIT **Starting with Number** 1

**Generate:** ○ Hit List ◉ Hit Count ○ Side by Side ○ Image

Search | Clear | Interrupt

## Search History

**DATE: Tuesday, December 26, 2006** Purge Queries | Printable Copy | Create Case

| Set Name side by side | Query | Hit Count | Set Name result set |
|---|---|---|---|
| *DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR* | | | |
| L22 | L21 and (pharmaceutical or medical) | 10 | L22 |
| L21 | L20 and rinsing | 70 | L21 |
| L20 | L19 and heat$4 | 620 | L20 |
| L19 | L18 and etch$4 | 844 | L19 |
| L18 | L17 and plasma | 909 | L18 |
| L17 | silicon and ("native oxide" same removal) | 1357 | L17 |
| L16 | ("surface coat$5" same pretreatment) | 0 | L16 |
| L15 | L14 and (micro adj (needle or blade or projection or pin)) | 76 | L15 |
| L14 | L13 and (coat$ or film) | 2183 | L14 |
| L13 | L12 NOT patch | 4653 | L13 |
| L12 | L11 and ((transdermal or percutaneous or "stratum corneum") same (needle or groove or ridge or projection or array or scratcher)) | 6072 | L12 |
| L11 | (transdermal or percutaneous or "stratum corneum") | 94645 | L11 |
| *DB=PGPB,USPT; PLUR=YES; OP=OR* | | | |
| L10 | L9 NOT patch | 14 | L10 |

| | | | |
|---|---|---|---|
| L9 | L8 and ((transdermal or percutaneous or "stratum corneum") same (needle or groove or ridge or projection or array or scratcher)) | 91 | L9 |
| L8 | L7 and (transdermal or percutaneous or "stratum corneum") | 1715 | L8 |
| L7 | 424/449.ccls. | 2087 | L7 |
| L6 | (Mahmoud near Ameri) AND @pd>20060609 | 4 | L6 |
| L5 | ((Juantia adj A) near Johnson) AND @pd>20060609 | 0 | L5 |
| L4 | ((Peter adj E) near Daddona) AND @pd>20060609 | 3 | L4 |
| L3 | ((Juantia adj A) near Johnson) AND @pd>20060609 | 0 | L3 |
| L2 | ((Wendy adj A) near Young) AND @pd>20060609 | 1 | L2 |
| L1 | ((Michel near (J adj N)) near Cormier) AND @pd>20060609 | 2 | L1 |

END OF SEARCH HISTORY

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(FILE 'HOME' ENTERED AT 00:44:05 ON 26 DEC 2006)

     FILE 'CAPLUS, MEDLINE, USPATFULL' ENTERED AT 00:44:20 ON 26 DEC 2006
L1        195492 S (ETCH? OR PLASMA OR HEAT? OR RINS? OR OXIDATION) (5A) (SI OR
L2           225 S L1 (P) (PHARMACEUTICAL OR MEDIC?)
L3             8 S L2 (P) (TRANSDERMAL OR PERCUTANEOUS OR (STRATUM(W)CORNEUM))
L4             7 DUPLICATE REMOVE L3 (1 DUPLICATE REMOVED)
L5             7 FOCUS L4 1-

=> d que l1
L1        195492 SEA (ETCH? OR PLASMA OR HEAT? OR RINS? OR OXIDATION) (5A) (SI
                 OR SILICON OR (SILICONE(W) DIOXIDE))
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L5 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
TI Medical electrode
AB A medical electrode for obtaining biopotentials from the skin of a subject or electrically stimulating the subject's skin and deeper tissue layers. The electrode has a carrier base member from which project a plurality of spikes arranged in an array on one surface of the base member. The spikes are sufficiently long to penetrate through the stratum corneum into the stratum germinativum of the subject's skin. The spikes may be formed by a deep reactive ion etching process on a silicon wafer forming the base member. A fluid container may be formed on another surface of the skin for providing a drug to the surface of the skin through holes in the base member. The action of the spikes on the skin enhances administration of the drug.

L5 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
TI Medical electrode
AB A medical electrode for obtaining biopotentials from the skin of a subject or electrically stimulating the subject's skin and deeper tissue layers. The electrode has a carrier base member from which project a plurality of spikes arranged in an array on one surface of the base member. The spikes are sufficiently long to penetrate through the stratum corneum into the stratum germinativum of the subject's skin. The spikes may be formed by a deep reactive ion etching process on a silicon wafer forming the base member. A fluid container may be formed on another surface of the skin for providing a drug to the surface of the skin through holes in the base member. The action of the spikes on the skin enhances administration of the drug.

L5 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2006 ACS on STN
TI A PZT insulin pump integrated with a silicon microneedle array for transdermal drug delivery
AB Many of the compds. in drugs cannot be effectively delivered using current drug delivery techniques (e.g., pills and injections). Transdermal delivery is an attractive alternative, but it is limited by the extremely low permeability of the skin. As the primary barrier to transport is located in the upper tissue, Micro-Electro-Mech.-System (MEMS) technol. provides novel means, such as microneedle array and PZT pump, in order to increase permeability of human skin with efficiency, safety and painless delivery, and to decrease the size of the pump. Microneedle array has many advantages, including minimal trauma at penetration site because of the small size of the needle, free from condition limitations, painless drug delivery, and precise control of penetration depth. These will promote the development of biomedical sciences and technol. and make medical devices more humanized. So far, most of the insulin pumps being used are mech. pumps. We present the first development of this novel technol., which can assemble the PZT pump and the microneedle array together for diabetes mellitus. The microneedle array based on a flexible substrate can be mounted on non-planar surface or even on flexible objects such as a human fingers and arms. The PZT pump can pump the much more precision drug accurately than mech. pump and the overall size is much smaller than those mech. pumps. The hollow wall straight microneedle array is fabricated on a flexible silicon substrate by inductively coupled plasma (ICP) and anisotropic wet etching techniques. The fabricated hollow microneedles are 200 μm in length and 30 μm in diameter The microneedle array, which is built with onboard fluid pumps, has potential applications in the chemical and biomedical fields for localized chemical anal., programmable drug-delivery systems, and very small, precise fluids sampling. The microneedle array has been installed in an insulin pump for demonstration and a leak free packaging is introduced.

L5 ANSWER 4 OF 7 USPATFULL on STN
TI Method of producing tapered or pointed cannula
AB A method of producing a tubular device is provided. The method comprises providing a tubular stock having an axial passage, heating the tubular stock at a first heating location to form a softened section, the softened section separating a workpiece portion of the tubular stock from a remaining portion of the tubular stock, and drawing the workpiece portion away from the remaining portion to elongate the softened section and separate the workpiece portion from the remaining portion to form the tubular device. The drawing is performed at a rate such that the tubular device has an axial passage having a substantially uniform inside diameter, and an end of the tubular device formed from the elongated softened section is tapered.

L5 ANSWER 5 OF 7 USPATFULL on STN
TI Method of producing tapered or pointed cannula
AB A method of producing a tubular device is provided. The method comprises providing a tubular stock having an axial passage, heating the tubular stock at a first heating location to form a softened section, the softened section separating a workpiece portion of the tubular stock from a remaining portion of the tubular stock, and drawing the workpiece portion away from the remaining portion to elongate the softened section and separate the workpiece portion from the remaining portion to form the tubular device. The drawing is performed at a rate such that the tubular device has an axial passage having a substantially uniform inside diameter, and an end of the tubular device formed from the elongated softened section is tapered.

L5 ANSWER 6 OF 7 USPATFULL on STN
TI Microneedles for minimally invasive drug delivery
AB The present invention provides a microneedle incorporating a base that is broad relative to a height of the microneedle, to minimize breakage. The microneedle further includes a fluid channel and a beveled non-coring tip. Preferably arrays of such microneedles are fabricated utilizing conventional semiconductor derived micro-scale fabrication techniques. A dot pattern mask is formed on an upper surface of a silicon substrate, with each orifice of the dot pattern mask corresponding to a desired location of a microneedle. Orifices are formed that pass completely through the substrate by etching. A nitride pattern mask is formed to mask all areas in which a nitride layer is not desired. A nitride layer is then deposited on the bottom of the silicon substrate, on the walls of the orifice, and on the top of the silicon substrate around the periphery of the orifice. The nitride layer around the periphery of the orifice is offset somewhat, such that one side of the orifice has a larger nitride layer. Anisotropic etching is used to remove a substantial portion of the substrate, creating a plurality of angular, blunt, and generally pyramidal-shaped microneedles. A subsequent removal of the nitride layer, followed by an isotropic etching step, softens and rounds out the blunt angular microneedles, providing generally conical-shaped microneedles. The uneven nitride layer adjacent the orifice ensures that the microneedles will include a beveled tip. Such microneedle arrays are preferably incorporated into handheld diagnostic and drug delivery systems.

L5 ANSWER 7 OF 7 USPATFULL on STN
TI Microneedles for minimally invasive drug delivery
AB The present invention provides a microneedle incorporating a base that is broad relative to a height of the microneedle, to minimize breakage. The microneedle further includes a fluid channel and a beveled non-coring tip. Preferably arrays of such microneedles are fabricated utilizing conventional semiconductor derived micro-scale fabrication techniques. A dot pattern mask is formed on an upper surface of a silicon substrate, with each orifice of the dot pattern mask

corresponding to a desired location of a microneedle. Orifices are formed that pass completely through the substrate by etching. A nitride pattern mask is formed to mask all areas in which a nitride layer is not desired. A nitride layer is then deposited on the bottom of the silicon substrate, on the walls of the orifice, and on the top of the silicon substrate around the periphery of the orifice. The nitride layer around the periphery of the orifice is offset somewhat, such that one side of the orifice has a larger nitride layer. Anisotropic etching is used to remove a substantial portion of the substrate, creating a plurality of angular, blunt, and generally pyramidal-shaped microneedles. A subsequent removal of the nitride layer, followed by an isotropic etching step, softens and rounds out the blunt angular microneedles, providing generally conical-shaped microneedles. The uneven nitride layer adjacent the orifice ensures that the microneedles will include a beveled tip. Such microneedle arrays are preferably incorporated into handheld diagnostic and drug delivery systems

(FILE 'HOME' ENTERED AT 00:56:17 ON 26 DEC 2006)

FILE 'CAPLUS, MEDLINE' ENTERED AT 00:56:29 ON 26 DEC 2006

L1 0 S (ORGANIC(3A)IMPURITY(3A)REMOVAL(3A)ON(3A)(SI OR SILICON)(3A)S

L2 3 S (ORGANIC(3A)IMPURITY(3A)REMOVAL) (P) (SI OR SILICON)

L3 3 DUPLICATE REMOVE L2 CAPLUS (0 DUPLICATES REMOVED)

FILE 'STNGUIDE' ENTERED AT 00:59:57 ON 26 DEC 2006

L3 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
TI Removal of organic impurities from the silicon surface by oxygen and UV cleaning
AB We have studied the effect of oxygen and water on the removal of organic impurities from the porous silicon surface under UV irradiation IR spectrum observations of the treated surface suggest that decomposition of oxygen to produce ozone, atomic oxygen, and hydroxyl radical is a rate determination step for the overall cleaning process.
ACCESSION NUMBER: 1996:507591 CAPLUS
DOCUMENT NUMBER: 125:146352
TITLE: Removal of organic impurities from the silicon surface by oxygen and UV cleaning
AUTHOR(S): Kim, Chang-Koo; Cung, Chan-Hwa; Moon, Sang Heup
CORPORATE SOURCE: Dep. Chem. Eng., Seoul National Univ., Seoul, 151-742, S. Korea
SOURCE: Korean Journal of Chemical Engineering (1996), 13(3), 328-330
CODEN: KJCHE6; ISSN: 0256-1115
PUBLISHER: Korean Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English

L3 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
TI Native oxide growth and organic impurity removal on silicon surface with ozone-injected ultrapure water
AB To manufacture ULSI devices with high performance and reliability in large volume, further integration and miniaturization are being promoted. The H2SO4/H2O2/H2O cleaning has serious problems: the cleaning step produces a large volume of chemical waste that must be treated properly. The authors developed a cleaning technol. using O3-injected ultrapure water. Ozone concentration in the water is 1-2 ppm. This process is capable of effectively removing organic contaminants from the wafer surface in a short time at room temperature Processing waste from this process is simple. Chemical composition of the ozone-injected ultrapure water can be controlled easily.
ACCESSION NUMBER: 1993:203329 CAPLUS
DOCUMENT NUMBER: 118:203329
TITLE: Native oxide growth and organic impurity removal on silicon surface with ozone-injected ultrapure water
AUTHOR(S): Ohmi, T.; Isagawa, T.; Kogure, M.; Imaoka, T.
CORPORATE SOURCE: Fac. Eng., Tohoku Univ., Sendai, 980, Japan
SOURCE: Journal of the Electrochemical Society (1993), 140(3), 804-10
CODEN: JESOAN; ISSN: 0013-4651
DOCUMENT TYPE: Journal
LANGUAGE: English

L3 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
TI Removal of nitrogen-containing organic compounds from crystalline metallosilicate
AB N-containing organic compds. are removed from crystalline metallosilicates having Si/metal atomic ratio ≥5 by firing the crystalline metallosilicates in the presence of a gas containing mol. O and addnl. a lower alc. ROH wherein R is C1-4 alkyl groups.
ACCESSION NUMBER: 1991:125402 CAPLUS
DOCUMENT NUMBER: 114:125402
TITLE: Removal of nitrogen-containing organic compounds from crystalline metallosilicate
INVENTOR(S): Kitamura, Masaru; Ichihashi, Hiroshi; Suzukamo, Gohfu

PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 8 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| EP 406069 | A2 | 19910102 | EP 1990-401754 | 19900621 |
| EP 406069 | A3 | 19911023 | | |
| EP 406069 | B1 | 19931222 | | |
| R: BE, DE, GB, IT, NL | | | | |
| US 5066630 | A | 19911119 | US 1990-537432 | 19900613 |
| JP 03097616 | A | 19910423 | JP 1990-171735 | 19900628 |
| JP 2564974 | B2 | 19961218 | | |
| PRIORITY APPLN. INFO.: | | | JP 1989-171007 A | 19890630 |
| OTHER SOURCE(S): | MARPAT 114:125402 | | | |